

REMARKS/ARGUMENTS

Claim Objections

In the Office Action, Examiner objects to claims 1-19 for informalities. Applicants have amended claims 1, 6 and 17 to correct the informalities. These amendments should not be construed to further limit the scope of these claims. Applicants respectfully request that the objection to claims 1-19 be withdrawn and the claims formally allowed at this time.

Allowable Subject Matter

Examiner has indicated that claims 9-11 and 13-15 are objected to for being dependent on a rejected base claim, but would be allowable if rewritten in independent form. Applicant thanks Examiner for indicating the allowability of these claims.

Claim Rejections under 35 U.S.C. §103

In the Office Action, Examiner rejects claims 1-7, 12, and 16-19 under 35 U.S.C. §103(a) as being unpatentable over US Patent 2,683,972 to Atkinson (hereafter Atkinson) in view of US Patent 3,259,145 to Engle (hereafter Engle). Examiner has failed to provide a prima facie basis for rejection under 35 U.S.C. § 103(a) because there is no teaching or suggestion in these references of the "liquefied and/or solidified condensables enriched fluid outlet" of the independent claims of the present application. In Figure 1, (6), and in Figures 3 and 4, (36A) are wings that cause a swirl in the vortex tubes. Note that there are separate outlets for a condensable enriched stream and a lean stream from the vortex tubes of the present invention. Atkinson and Engle use the vortex tubes to achieve adiabatic expansion of the inlet stream, not concentration of condensables in an outlet stream. Both Engle and Atkinson have only one outlet stream for their vortex tubes. The present invention takes advantage of the


extremely low pressures in a sonic velocity region by making a partial separation at that point rather than just using centrifugal separation of droplets that exist after the recompression at the end of the sonic expansion. This element is present in the claims, and is not taught or suggested by Atkinson or Engle. A prima facie basis for the rejection is therefore not presented by these references.

Dependent claims 2-7, 12 and 16-19 depend from either claim 1 or claim 17 and include all the limitations of the independent claims. Thus, Applicants respectfully request that the rejection of claims 1-7, 12, and 16-19 under 35 U.S.C. §103(a) be withdrawn and the claims formally allowed at this time.

Conclusion

Applicants have addressed each and every objection and ground for rejection. The amended claims are patentable over the cited art and Applicants request that the application be allowed. In the event the Examiner has any questions or there are any issues with respect to the application, the Examiner is invited to call the undersigned at the telephone number below prior to the issuance of any written action.

Respectfully submitted,
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